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Onno Mark Becker Hof

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EXAMINER

HYUN, SOON D

ART UNIT

PAPER NUMBER

2616

MAIL DATE

DELIVERY MODE

10/01/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/600,192

Applicant(s)

BECKER HOF ET AL.

Examiner

Soon D. Hyun

Art Unit

2616

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 July 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-29 and 31-58 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 4 and 22-25 is/are allowed.
- 6) ☒ Claim(s) 1-3, 5-21, 26-29 and 31-58 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 July 2007 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1, 12, and 13 are rejected under 35 U.S.C. 102(e) as being anticipated Miki et al (U.S. Patent No. 7,137,932).

Regarding claim 1, Miki et al discloses a method in a network element comprising the steps of:

converting (by an Access node AN11 in FIG. 1) Point to Point Protocol (PPP) protocol data units (PDUs) encapsulated according to different protocols (PPPoE, PPPoA or PPPoEoA) from IP terminals (IT 11-13 in FIG. 1) into PPP PDUs within a uniform encapsulation (Layer 2 Tunneling Protocol, L2TP), see col. 6, lines 37-43 and col. 7, lines 24-64; and

transmitting the uniformly encapsulated PPP PDUs (col. 6, lines 37-43), i.e., the PPP PDUs in L2TP are transmitted via a core network CN1 in FIG. 2 to an access node AN13 .

Regarding claim 12, Miki further discloses an access node (AN 13 in FIG1) is an aggregator as recited in claim (col. 6, lines 13-58).

Regarding claim 13, Mike further discloses that the access node is agnostic of the encapsulation of the PPP PDUs to be converted (col. 6, lines 13-58).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

4. Claims 2, 3, 5-11, 14-29, and 31-58 are rejected under 35 U.S.C. 103(a) as being unpatentable over Miki et al (U.S. Patent No. 7,173,932).

Regarding claims 2, 40, 41, and 43, Miki et al (Miki) discloses a method in a network element (access node AN 11 in FIG. 1) comprising:

using a Point to Point Protocol over PPPoE session identifier (111 in FIG. 3) to track a first flow of PPP protocol data units (PDUs) encapsulated with a non-Ethernet protocol (input session data via ATM interface unit 30-m in FIG. 2);

converting each PDU of the first flow of PPP PDUs into PPPoE PDUs (by output session processing unit 40 in FIG. 1) to transmit the flow via Ethernet output interface unit 50-1 in FIG. 1); and

However, Miki does not explicitly teach that converting each of a flow of PPPoE PDUs with a session identifier into a second flow of PPP PDUs encapsulated with the non-Ethernet protocol.

Miki teaches a plurality of interfaces (30-1 to 30-m in FIG. 2) to accept PPP PDUs in PPPoX. Therefore it would have been obvious to one having ordinary skill in the art to provide an Ethernet input interface unit to accept PPP PDUs in PPPoE such that the output session processing unit 40 converts each of a flow of PPPoE PDUs with a session identifier into a second flow of PPP PDUs encapsulated with the non-Ethernet protocol to transmit the flow via ATM output interface unit (50-m in FIG. 2) encapsulated with the non-Ethernet protocol.

Regarding claim 3, refer to the discussion for claim 2.

The first port is the ATM interface unit 30-m in FIG. 2 and the second port is an Ethernet input interface unit as discussed for claim 2.

Regarding claim 5, refer to the discussion for claims 2 and 3. Miki further discloses that the Ethernet output interface unit (50-1) multiplexes the different flows of PPPoE traffic and transmits the multiplexed PPPoE traffic, i.e., the interface functions

as a second port and a second network element (an access node AN 13 in FIG1) receives the multiplexes PPPoE traffic to terminate each of the different flows of PPPoE traffic.

Regarding claim 6, refer to the discussion for claims 2-5. Miki further discloses that a plurality of access nodes (AN11 and AN12 in FIG. 1) are a set of service providers points of presence (PoPs) and a PoP Major and the access node (AN 13 in FIG1) is an aggregator as recited in claim (col. 6, lines 13-58).

Regarding claim 7, refer to the discussion for claim 1. However, Miki does not explicitly teach that the method is implemented in computer program (software). It would have been obvious to one having ordinary skill in the art to provide software to execute a method to take advantage of using the software, i.e., programmable.

Regarding claim 8, refer to the discussion for claim 1, however, Miki teaches that the uniformed capsulation is L2TP or the like. Therefore, it would have been obvious to one having ordinary skill in the art to use PPPoE protocol instead of L2TP if no-unexpected results can be seen from the use of PPPoE.

Regarding claim 9, refer to the discussion for claim 2 and 8. Miki further discloses that the converting is performed by matching an entry in a data structure (a table in FIG. 3) that provide a PPOE session identifier for each PPP PDU to be converted (col. 8, lines 10-35).

Regarding claims 10, 15, 19, 27, 31, 36, and 45, refer to the discussion for claim 9. A proxy module in the claim is equivalent to the access node (FIG. 2).

Regarding claim 11, 16, 20, 28, 32, 37, and 46, Miki further discloses that the data structure is modified to indicate that a subscriber side flow is active once a PPP session is opened (col. 6, line 59-col. 7, line 10 and col. 8, lines 10-35).

Regarding claims 14, 18, 26, 35, and 44, Miki further discloses that the converting each PDU is performed by matching an entry in a data structure (a table in FIG. 3) within the network element having a relationship between the session identifier and the first flow (col. 8, lines 10-35).

Regarding claims 17, 21, 29, 33, 39, and 42, Mike further discloses that the access node is agnostic of the encapsulation of the PPP PDUs to be converted (col. 6, lines 13-58).

Regarding claim 34, refer to the discussion for claim 8.

Regarding claims 38 and 47, refer to the discussion for claim 12.

Regarding claims 48 and 49, refer to the discussion claims 2 and 9.

Regarding claim 50, refer to the discussion for claim 13.

Regarding claim 51, refer to the discussion for claim 10.

Regarding claim 52, refer to the discussion for claim 11.

Regarding claims 53 and 57, refer to the discussion for claim 2, however, Miki does not teach a demux to separate the IP packets and PPPoX data packets and a virtual router for transmitting the IP packets. It would have been obvious to one having ordinary skill in the art to provide a demux and a virtual router to transmit the IP packets to a different network from a network for PPP.

Regarding claim 54, refer to the discussion for claim 9.

Regarding claim 55, refer to the discussion for claim 10.

Regarding claim 56, refer to the discussion for claim 11.

Regarding claim 58, refer to the discussion for claim 17.

Allowable Subject Matter

5. Claims 4 and 22-25 are allowed.

The following is a statement of reasons for the indication of allowable subject matter: the prior art of record fails to teach a point to point protocol (PPP) switch module having the PPPoX module and the PPPoE switch module in specific combination as recited in claim 4.

Response to Arguments

6. Applicant's arguments filed 7/26/2007 have been fully considered but they are not persuasive.

Regarding claim 1, Applicant argues (Remarks page 17, lines 16-21 and page 18, lines 1-8) that Miki reference does not teach converting Point to Point Protocol (PPP) protocol data units (PDUs) encapsulated according to different protocols into PPP PDUs within a uniform encapsulation and Miki does not teach transmitting the uniformly encapsulated PPP PDUs, since protocol is never converted to any other protocol during the method of Miki. Examiner disagrees, With reference to the discussion for claim rejection, PPPoE, PPPoA and PPPoEoA are the different protocols and the PPP PDUs

are uniformly encapsulated (tunneled) by the L2TP (Layer 2 Tunneling protocol), and then the PPP in the L2TP are transmitted via the core network to the access node AN13.

Regarding claims 2, 3, 5-7, 40, 48, and 53, Applicant argues same issues as claim1. Therefore, refer to the response for the claim1 for the arguments.

For the reasons as discussed above, Examiner believes that the claim rejection is proper.

Conclusion

7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).


A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Soon D. Hyun whose telephone number is 571-272-3121. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chi H. Pham can be reached on 571-272-3179. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.


S. Hyun
9/25/2007


CHI PHAM
SUPERVISORY PATENT EXAMINER

9/27/07